WHAT IS CLAIMED IS:

1. A method for determining the stress-relaxation characteristics of a sealant, wherein the test method comprises:

applying a sealant material layer between the inner surface of a first plate and the inner surface of a second plate, whereby the first plate, second plate, and sealant material layer collectively form a test assembly;

disposing a first end of a male fastener component through the first plate, sealant material layer, and second plate of the test assembly and connecting the first end to a mating fastener component, whereby the male fastener component and the connected mating fastener component collectively form a fastener assembly;

providing an initial tension load upon the fastener assembly thereby compressing the first plate and second plate together;

measuring the elongation of the male fastener component at the initial load and at an initial temperature;

heating the test assembly to a second temperature for a period of time and then lowering the temperature to the initial temperature; and,

measuring the elongation of the male fastener to determine the tension load remaining on the fastener after heating.

2. The method of Claim 1, wherein the step of disposing the first end of the male fastener component through the first plate, sealant layer, and second plate of the test assembly and connecting that first end to a mating fastener component comprises

disposing a first end of a threaded fastener through the first plate, sealant layer, and second plate of the test assembly and threading that first end into a mating threaded component.

3. The method of Claim 2, wherein the step of providing an initial tensional load upon the fastener comprises torquing the fastener.

4. The method of Claim 2, wherein the step of applying a sealant layer comprises applying a uniformly-thick sealant layer between the inner surface of the first plate and the inner surface of the second plate.

5. The method of Claim 2, wherein the first and second plates are made from materials selected from the group consisting of metal, polymer, composite, and combinations thereof.

6. The method of Claim 2, wherein the step of disposing the first end of the male fastener component through the first plate, sealant layer, and second plate of the test assembly comprises disposing the first end of the male fastener component through and perpendicular to the first plate, sealant layer, and second plate of the test assembly.

7. The method of Claim 2, further comprising the step of expressing the stress-relaxation characteristic of the sealant as the amount of load on the male fastener component measured versus the length of time the test assembly has been exposed to heating at the second temperature.

8. The method of Claim 1, wherein the sealant is a wet-sealant and is allowed to cure for at least one week prior to heating.

9. The method of Claim 1, wherein the sealant is a dry-sealant and is allowed to cure for at least 24 hours prior to heating.

10. The method of Claim 1, further comprising the steps of

disposing at least one additional fastener assembly through the test assembly, and

providing a tensional load on each of the fastener assemblies such that each fastener has the same initial load.

11. The method of Claim 1, further comprising the steps of repeatedly heating the test assembly to the second temperature and then lowering the temperature to the initial temperature; and,

measuring the elongation of the male fastener component to determine the load remaining on the fastener assembly after each heating.

12. The method of Claim 11, further comprising the step of expressing the stress-relaxation characteristic of the sealant as the amount of load on the fastener assembly versus the cumulative length of time the test assembly has been exposed to heating at the second temperature.

13. A method for testing stress-relaxation properties of a sealant comprising the steps of:

coating a uniformly-thick sealant layer upon the inner surface of a first plate;

placing the coated inner layer of the first plate in opposing face to face relation with the inner surface of a second plate;

disposing a threaded fastener through and perpendicular to the first plate, sealant layer, second plate, and into a mating threaded component;

torquing the fastener to apply an initial load of from 100 in-lbs to 150 in-lbs;

measuring the elongation of the fastener at room temperature;

heating the plates, fastener, and mating component to a second temperature between about 150°F and about 400°F for a fixed period of time and then lowering the temperature to room temperature; and,

remeasuring the elongation of the fastener.

14. The method of Claim 13, further comprising the steps of

converting the measured and remeasured elongation of the fastener to load values; and,

expressing the stress-relaxation characteristic of the sealant as the amount of load on the fastener versus the length of time the test assembly has been exposed to heating at the second temperature.

15. The method of Claim 13, further comprising the steps of

disposing at least one additional threaded fastener through and perpendicular to the first plate, sealant layer, second plate, and into a mating threaded component; and,

torquing each of the fasteners such that each fastener has the same initial load.

16. The method of Claim 13, further comprising the steps of

repeatedly heating the plates, fastener, and mating component to the second temperature for a fixed period of time and then lowering the temperature to room temperature; and,

measuring the elongation of the fastener to determine the load remaining on the fastener after each heating.

17. The method of Claim 16, further comprising the step of expressing the stress-relaxation characteristic of the sealant as the amount of load on the fastener versus the cumulative length of time the plates, fastener, and mating components have been exposed to heating at the second temperature.